



1. C++ std::vector vs. C# List<T>

C++ STL	Description	C# Equivalent	Description
<code>std::vector</code>	A dynamic array that can resize itself automatically.	<code>List<T></code>	A strongly-typed dynamic array.
<code>push_back(value)</code>	Adds an element to the end of the vector.	<code>Add(item)</code>	Adds an item to the end of the list.
<code>pop_back()</code>	Removes the last element of the vector.	<code>RemoveAt(list.Count - 1)</code>	Removes the last item.
<code>size()</code>	Returns the number of elements in the vector.	<code>Count</code>	Gets the number of elements in the list.
<code>empty()</code>	Checks if the vector is empty.	<code>Count == 0</code>	Returns true if the list is empty.
<code>resize(newSize)</code>	Resizes the vector to contain the specified number of elements.	<code>Capacity</code>	Adjusts the storage capacity of the list.
<code>at(index)</code>	Accesses the element at the specified index.	<code>list[index]</code>	Gets or sets the element at the specified index.
<code>insert(pos, value)</code>	Inserts an element at the specified position.	<code>Insert(index, item)</code>	Inserts an item at the specified index.
<code>erase(pos)</code>	Removes the element at the specified position.	<code>RemoveAt(index)</code>	Removes the item at the specified index.
<code>clear()</code>	Removes all elements from the vector.	<code>Clear()</code>	Clears all items in the list.

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